

Application No. 10/582,809  
Paper Dated: December 4, 2008  
In Reply to USPTO Correspondence of August 5, 2008  
Attorney Docket No. 0388-061722

**AMENDMENTS TO THE DRAWINGS**

The attached sheets of drawings include changes to Figs. 1, 15, 22 and 25. These sheets, which include Figs. 1, 15, 21, 22 and 25, replace the original sheets including Figs. 1, 15, 21, 22 and 25.

Attachments: Replacement Sheets

Annotated Sheets Showing Changes

## **REMARKS**

### **I. Introduction**

The Office Action of August 5, 2008 has been reviewed and the Examiner's comments carefully considered. Claims 1-11 were pending in this application. The present Amendment amends claims 1, 4-8 and 10, all in accordance with the originally-filed specification. No new matter has been added. In addition, the present Amendment amends the specification and drawings in response to the Examiner's objections. The present Amendment also cancels claims 3, 9 and 11. Accordingly, claims 1, 2, 4-8 and 10 are currently pending in this application, and claim 1 is in independent form.

### **II. Drawing Objections**

The drawings stand objected to for minor informalities. Specifically, the Examiner has objected to the drawings for failing to comply with 37 C.F.R. §1.84(p)(4) because reference character "27" has been used to designate both the flange-shaped attaching portion in Figs. 1, 15 and 22 and the engaging pieces in Figs. 16 and 17, and reference character "15" has been used to designate both the control pinching portion in Figs. 2-5, 13 and 17 and the control knobs in Figs. 18 and 19. The Examiner has also objected to Fig. 25 for lacking a legend such as --Prior Art-- because only that which is old is illustrated. Finally, the Examiner has objected to Fig. 1 because the line for reference character "27" appears to be pointing to the wrong area.

The Applicants believe that replacement Figs. 1, 15, 22 and 25, along with the above amendments to the specification, overcome the Examiner's objections. Amendments to Figs. 1, 15, 22 and 25 are indicated in the attached annotated copies of Figs. 1, 15, 22 and 25. Reconsideration and withdrawal of these objections is respectfully requested.

### **III. Specification Objections**

The specification stands objected to for a variety of informalities. The Applicants believe that the above amendments to the specification overcome the Examiner's informality objections. Reconsideration and withdrawal of these objections is respectfully requested.

**IV. 35 U.S.C. §112, Second Paragraph Rejections**

Claims 1-10 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. The Applicants believe that the above amendments to the claims overcome the Examiner's indefiniteness rejections. Reconsideration and withdrawal of these rejections is respectfully requested.

**V. Prior Art Rejections**

Claims 1 and 2 stand rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 2,376,566 to Woodling (hereinafter "the Woodling patent"). Claims 3-7, 9 and 11 stand rejected under 35 U.S.C. §103(a) for obviousness over the Woodling patent. Claim 8 stands rejected under 35 U.S.C. §103(a) for obviousness over the Woodling patent in view of United States Patent No. 7,207,606 to Owen et al. (hereinafter "the Owen patent"). Claim 10 stands rejected under 35 U.S.C. §103(a) for obviousness over the Woodling patent in view of United States Patent No. 2,778,662 to Smith (hereinafter "the Smith patent"). In view of the above amendments and the following remarks, the Applicants respectfully request reconsideration of these rejections.

As defined by amended independent claim 1, the present invention is directed to a pipe joint construction that includes an elastic seal member for hermetically sealing between an inner circumferential surface of a receiving pipe section and an outer circumferential surface of an inserted pipe section inserted into and connected to the receiving pipe section in a pipe axis direction, and a lock member provided interior to the inner circumferential surface of the receiving pipe section adjacent a receiving opening thereof for preventing separating movement of the pipe sections by contacting an engaging projection protruding from the outer circumferential surface of the inserted pipe section in the pipe axis direction. The pipe joint construction further includes an attachment/detachment control device for attaching and detaching the lock member to/from the receiving pipe section by rotating the lock member about the pipe axis direction relative to a rotating operation passage of a rotating operation guide groove formed in the inner circumferential surface of the receiving opening of the receiving pipe

section and by moving, in the pipe axis direction, the lock member placed in a specific attachment/detachment operating position in a passage of rotation. The attachment/detachment control device includes a plurality of circumferentially divided control members insertable and removable in the pipe axis direction through a space between the outer circumferential surface of the inserted pipe section and the inner circumferential surface of the receiving pipe section, and a plurality of circumferentially extending split lock pieces forming the lock member and dispersedly formed on the control members. The receiving pipe section includes, formed adjacent a receiving opening end thereof, attachment/detachment recesses for allowing insertion and removal of the split lock pieces in the pipe axis direction, and retainer wall portions for contacting the split lock pieces in the pipe axis direction when the split lock pieces inserted through the attachment/detachment recesses are rotated about the pipe axis direction to a predetermined attachment position thereby to prevent disengaging movement of the lock pieces. The pipe joint construction further includes a return preventive device provided for receiving the split lock pieces in positions advanced on a removing side in the pipe axis direction in the rotating operation passage when the split lock pieces inserted into the receiving pipe section are rotated along the rotating operation passage, and for preventing or restraining a relative rotation of the split lock pieces in a receiving position toward the specific attachment/detachment operating position. The pipe joint construction also includes an elastic urging element provided between the split lock pieces and the receiving pipe section in the rotating operation passage, and provided for urging the split lock pieces to the receiving position of the return preventive device while being brought into contact with the split lock pieces and the receiving pipe section in the pipe axis direction.

The Woodling patent is directed to a closure device for a cylinder (10). The closure device includes a cylinder head (33) arranged to fit over the end portion (13) of the cylinder (10). The cylinder head (33) is anchored to the end portion (13) by a plurality of keeper elements (35). The keeper elements are slid over the end of the cylinder into flat slots (36). Then, set screws (41) are turned to force the cylinder head to the left until sloping shoulder (37) rides against an abutting surface (38) (see Fig. 4).

The Woodling patent does not teach or suggest an attachment/detachment control

device for attaching and detaching the lock member to/from the receiving pipe section by **rotating** the lock member about the pipe axis direction relative to the receiving pipe section as required by amended independent claim 1. The Examiner contends that the keeper elements (35) of the Woodling patent are equivalent to both the lock member and the attachment/detachment control device of amended independent claim 1. However, the Woodling patent clearly describes that the keeper elements (35) are slid over the end of the cylinder (10) and positioned within recesses (36). The cylinder head (33) is then rotated by turning screws (41) thereby creating a wedging force between surfaces (37 and 38) (see Fig. 4). This wedging force secures cylinder head (33) to cylinder (10) (see column 3, line 70 to column 4, line 20 of the Woodling patent). Accordingly, keeper elements (35) are **never rotated** about the cylinder axis as is required by the lock member of independent claim 1. Instead, these keeper elements (35) remain stationary within recesses (36) while the cylinder head (33) is rotated to produce a wedging force.

In addition, the Woodling patent does not teach or suggest an elastic urging element provided in the rotating operation passage as required by amended independent claim 1. The only element disclosed in the Woodling patent that could be considered an urging element is the set screw (41). However, this set screw (41) is not an **elastic** urging element and it is not located in the rotating operation passage as required by amended independent claim 1.

On the other hand, in amended independent claim 1 and as shown in Figs. 22 to 24 of the present application, the elastic urging elements (29, 30) are efficiently provided at necessary and sufficient positions for moving and urging each split lock piece (7A) from the predetermined attachment position to the receiving position, in view of the relationship between the split lock pieces (7A) and the receiving pipe section (1). Accordingly, the return preventive device (engaged recess (26)) in cooperation with the elastic urging elements (29, 30) steadily guides the split lock pieces (7A) to the receiving position. The necessary and sufficient position discussed herein is a position in the rotating operation passage of the rotating operation guide groove (13) formed in the inner circumferential surface of the receiving pipe section (1), and at the same time, between the split lock piece (7A) and the receiving pipe section (1) (*see*, for example, the positions of the elastic urging elements (29, 30) in Figs. 22 to 24). With such a configuration, the inserted pipe section (2) or the split lock piece (7A) is subjected to external

force and the movement of the split lock piece 7A from the receiving position to a rotating operation passage side (such as the predetermined attachment position and the predetermined attachment/detachment operating position, especially the latter) is suppressed, to thereby secure the contact between the retainer wall portions (12) of the receiving pipe section (1) and the lock member (7). As a result, a reinforced function of preventing separation, through the contact between the lock member (7) and the engaging projections (5) on the inserted pipe section (2), is constantly and reliably performed. In other words, while efficiently arranging the relatively small-sized elastic urging elements (29, 30) just enough to fulfill the purpose, a reinforced function of preventing separation, through the contact between the lock member (7) and the engaging projections (5), is constantly and reliably performed.

Accordingly, amended independent claim 1 is not anticipated or rendered obvious by the teachings of the Woodling patent.

For the foregoing reasons, the Applicants believe that the subject matter of amended independent claim 1 is not anticipated or rendered obvious by the Woodling patent. Reconsideration of the rejection of claim 1 is respectfully requested.

Claims 2 and 4-7 depend from and add further limitations to amended independent claim 1 and are believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 1. Reconsideration of the rejection of claims 2 and 4-7 is respectfully requested.

Claim 8 depends from and adds further limitations to amended independent claim 1. The Woodling patent was discussed hereinabove in connection with amended independent claim 1. The Owen patent is directed to a mechanical pipe joint, and is provided by the Examiner as allegedly teaching space limiting members made of a synthetic resin. The Owen patent does not cure the deficiencies of the Woodling patent. Therefore, claim 8 is believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 1. Reconsideration of the rejection of claim 8 is respectfully requested.

Claim 10 depends from and adds further limitations to amended independent claim 1. The Woodling patent was discussed hereinabove in connection with amended independent claim 1. The Smith patent is directed to a sleeve-type pipe clamp and is provided by

the Examiner as allegedly teaching a recess formed in the split lock pieces into which part of the receiving pipe section is engageable. The Smith patent does not cure the deficiencies of the Woodling patent. Therefore, claim 10 is believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 1. Reconsideration of the rejection of claim 10 is respectfully requested.

## **VI. References Submitted in the Concurrently Filed Information Disclosure Statement**

Some of the references submitted in the concurrently filed Information Disclosure Statement (IDS) were originally cited in a Japanese Office Action, dated September 4, 2008, in a corresponding Japanese application (Japanese Patent Application No. 2003-419314). These references are as follows: 1) Japanese Examined Patent publication No. JP 4-75438 (hereinafter “Japanese Reference 1”), which corresponds to United States Patent No. 4,540,204; 2) Japanese Unexamined Patent Application Publication No. JP 55-54788 (hereinafter “Japanese Reference 2”); 3) Japanese Unexamined Utility Model Application Publication No. JP 56-155188 (hereinafter “Japanese Reference 3”); 4) Japanese Unexamined Patent Application Publication No. JP 55-109809 (hereinafter “Japanese Reference 4”); and 5) Japanese Unexamined Utility Model Application Publication No. JP 51-86821 (hereinafter “Japanese Reference 5”). A summary of the Japanese Office Action is also submitted with the IDS.

In the Japanese Office Action, Japanese claim 10, which corresponds to previously pending claim 11 in the present application, was rejected on the basis of Japanese Reference 1 or 2 in view of Japanese Reference 4. However, this combination of references does not teach or suggest an elastic urging element provided between the split lock pieces and the receiving pipe section in the rotating operation passage of the rotating operation guide groove as required by amended independent claim 1.

In addition, Japanese References 1 and 2, either alone or in combination, fail to teach or suggest at least a “return preventive device” and an “elastic urging element” as required by amended independent claim 1.

Furthermore, Japanese Reference 4 discloses a blocking cylinder (5), which could possibly serve as an urging device for urging a pressing cylinder (4). The blocking cylinder (5)

has approximately the same cross section in a radial direction of a joint pipe (3) as that of the pressing cylinder (4) (see Fig. 3), and is arranged between the whole body of the pressing cylinder (4) and a joint main body (1), while the joint pipe (3) is connected to the joint main body (1). In other words, the blocking cylinder (5) in Japanese Reference 4 is formed to have a remarkably large size in accordance with the structural relationship with the joint pipe (3), and at the same time, is arranged between the whole body of the pressing cylinder (4) and the joint main body (1), regardless of an L-shaped guiding groove (14) and a locking hole (15) in the joint main body (1), as well as a locking projection (41) of the pressing cylinder (4). Therefore, the blocking cylinder (5) has a notably wasteful shape and at the same time is not arranged in an efficient manner for appropriately urging the locking projection (41) of the pressing cylinder (4) to the locking hole (15) in the joint main body (1). Accordingly, Japanese Reference 4 cannot attain the operation and effect of amended independent claim 1.

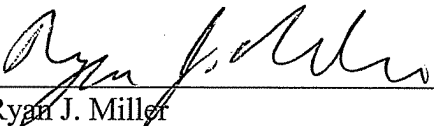
## VI. Conclusion

Based on the foregoing amendments and remarks, reconsideration of the rejections and allowance of pending claims 1, 4-8 and 10 are respectfully requested. Should the Examiner have any questions, or wish to discuss the application in further detail, the Examiner is invited to contact Applicants' undersigned representative by telephone at 412-471-8815.

Respectfully submitted,

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Fig. 1

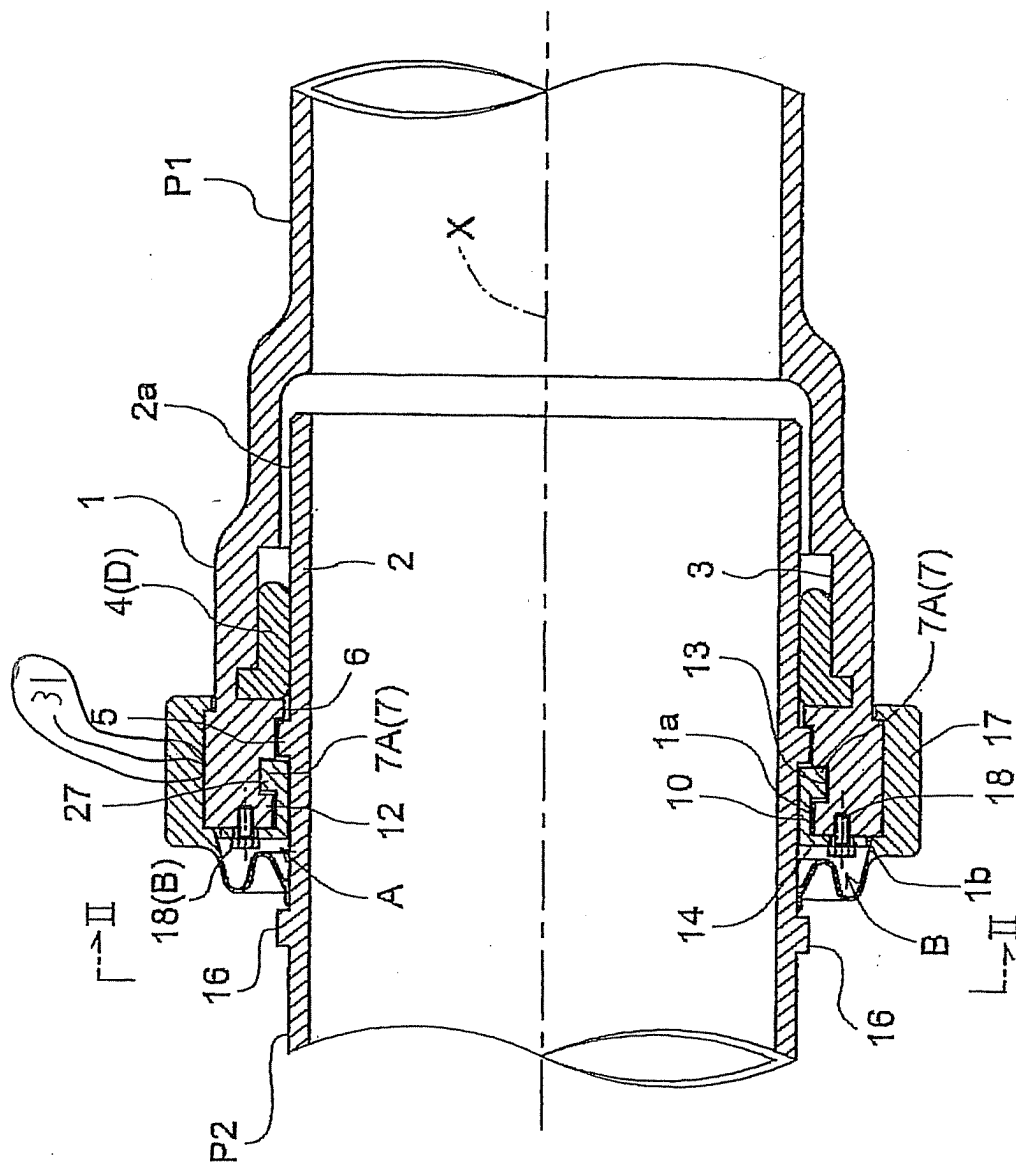


Fig. 15

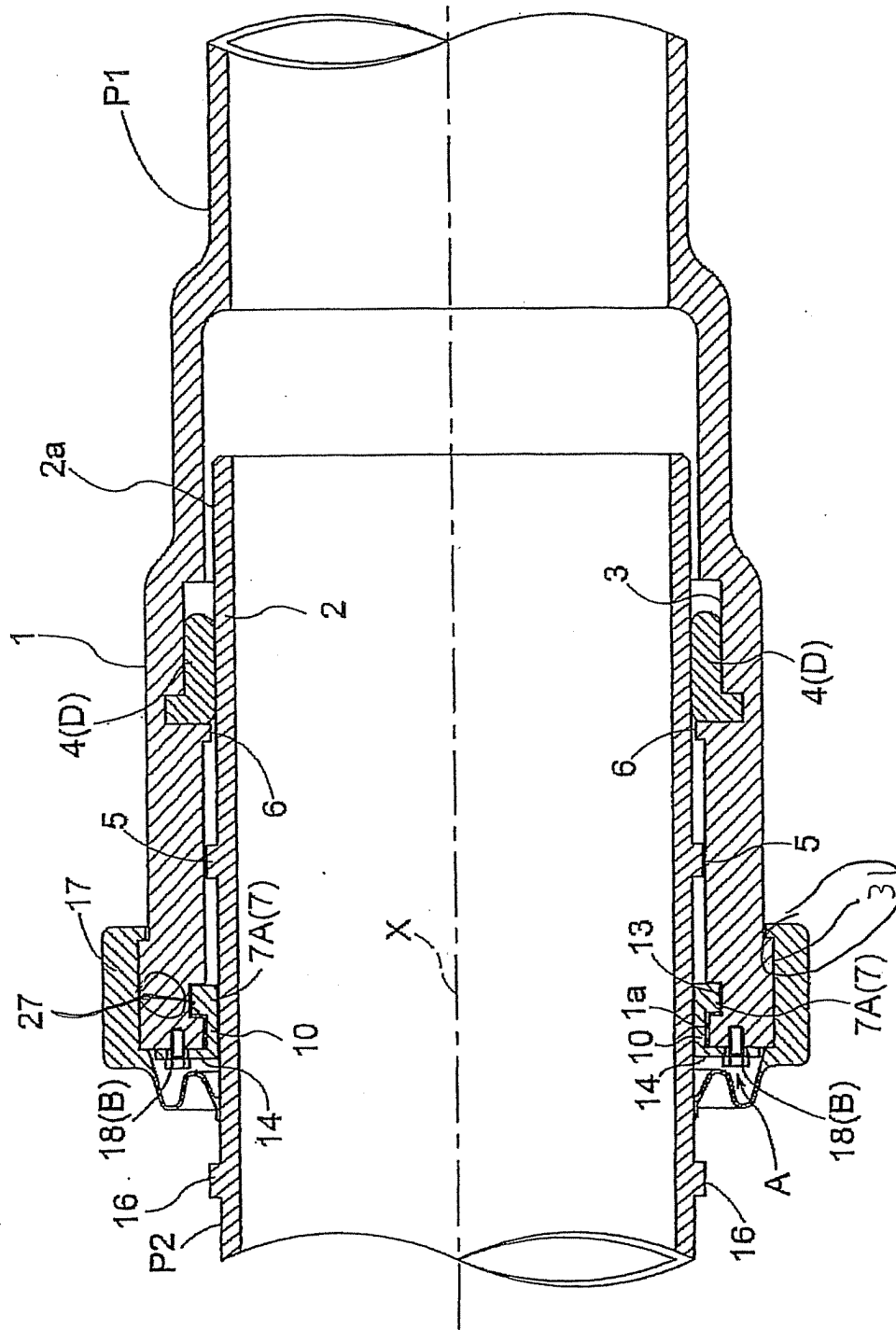


Fig. 21

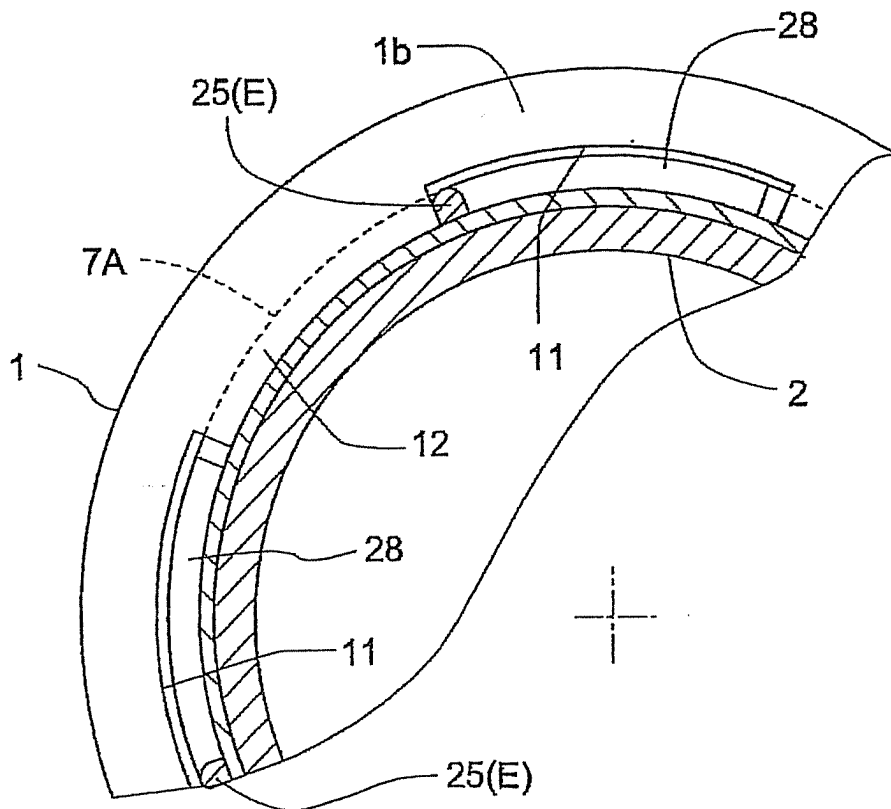
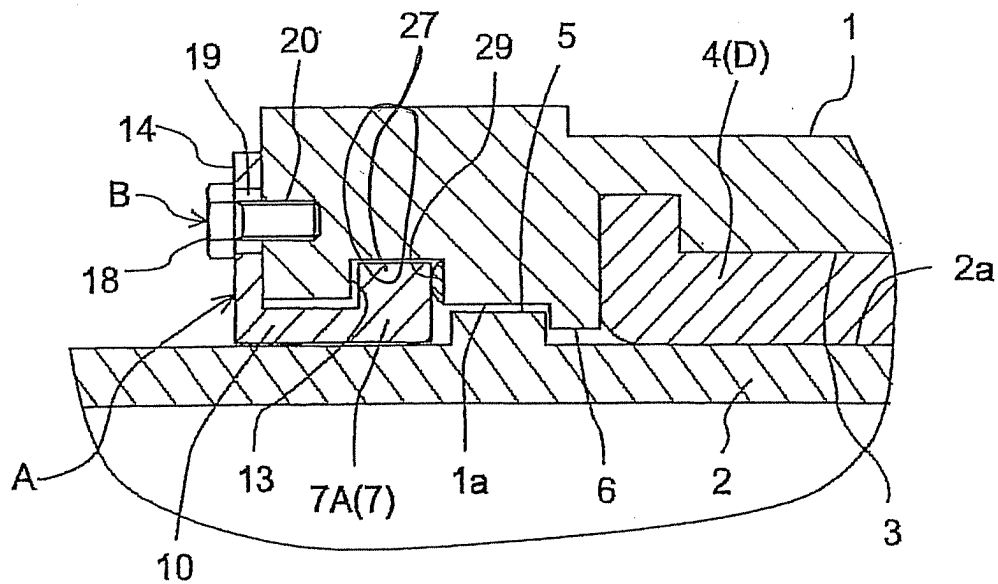


Fig. 22



## Annotated Sheet

PRIOR ART